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/Wesley L. Austin/

Attorney for Appellants

PATENT APPLICATION
Docket No. 2291.2.17

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellants:	Michael L. Howard et al.	
Serial No.:	09/922,813	
Filed:	August 6, 2001	
Title:	COMMUNICATIONS MODULE FOR WIRELESS COMMUNICATIONS WITH AN ELECTRONIC DEVICE TO ENABLE REMOTE ACCESS	Group Art Unit: 2618
Examiner:	Raymond S. Dean	

APPEAL BRIEF - CORRECTED

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

An Office Action dated March 14, 2008 rejected claims 1-6, 8, 10-12, 15, 17, 19-31, 33, 35-38, 41-49, 51, 53-55 and 58-71 in the present application. A Notice of Appeal was submitted on June 13, 2008. Appellants' Appeal Brief is being filed herewith.

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1. REAL PARTY IN INTEREST

The real party in interest is the assignee, Matsushita Electric Works, Ltd.

2. RELATED APPEALS AND INTERFERENCES

There are no related appeals and/or interferences.

3. STATUS OF CLAIMS

Claims 1-6, 8, 10-12, 15, 17, 19-31, 33, 35-38, 41-49, 51, 53-55 and 58-71 are pending in the present application. Claims 7, 9, 13, 14, 16, 18, 32, 34, 39, 40, 50, 52, 56 and 57 have been canceled. Claims 1-6, 8, 10-12, 15, 17, 19-31, 33, 35-38, 41-49, 51, 53-55, and 58-71 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,891,838 to Petite et al. (hereinafter, "Petite") in view of U.S. Patent Application Publication No. 2002/0019831 to Wade (hereinafter, "Wade") in further view of U.S. Patent Application Publication No. 2003/0083078 to Allison et al. (hereinafter, "Allison"). Appellants appeal the rejection of claims 1-6, 8, 10-12, 15, 17, 19-31, 33, 35-38, 41-49, 51, 53-55 and 58-71.

4. STATUS OF AMENDMENTS

No amendments were filed subsequent to the final rejection.

5. SUMMARY OF CLAIMED SUBJECT MATTER

Computer and communication technologies continue to advance at a rapid pace. Indeed, computer and communication technologies are involved in many aspects of a person's day. For example, many devices being used today by consumers have a small computer incorporated within the device. These small computers come in varying sizes and degrees of sophistication. These small computers may vary in sophistication from one microcontroller to a fully-functional complete computer system. For example, small computers may be a one-chip computer, such as a microcontroller, a one-board type of computer, such as a controller, a typical desktop computer, such as an IBM-PC compatible, etc.

Computers typically have one or more processors. The processor(s) usually are interconnected to different external inputs and outputs and function to manage the particular computer or device. For example, a processor in a thermostat may be connected to buttons used to select the temperature setting, to the furnace or air conditioner to change the temperature, and to temperature sensors to read and display the current temperature on a display.

Many appliances, devices, etc., include one or more small computers. For example, thermostats, furnaces, air conditioning systems, refrigerators, telephones, typewriters, automobiles, vending machines, and many different types of industrial equipment now typically have small computers, or processors, inside of them. Computer software runs the processors of these computers and instructs the processors to carry out certain tasks. For example, the computer software running on a thermostat may cause an air conditioner to stop running when a particular temperature is reached or may cause a heater to turn on when needed.

These types of small computers that are a part of a device, appliance, tool, etc., are often referred to as embedded systems. The term "embedded system" usually refers to computer hardware and software that is part of a larger system. Embedded systems may not have typical input and output devices such as a keyboard, mouse, and/or monitor. Usually, at the heart of each embedded system is one or more processor(s).

Embedded systems may be used to control and/or monitor appliances, machines, tools, sensors, the use of certain resources such as power or water, etc. Some embedded systems cannot be easily accessed and/or cannot easily be given inputs. Users of these embedded

systems may be able to have more control over the operation of appliances, machines, tools, sensors and many other devices if the embedded system were more accessible to enter inputs and/or to communicate with. In addition, more information may be available to users if embedded systems were better adapted for communications with other embedded systems or computers. For example, if users were able to communicate with an embedded system controlling a thermostat, they may access the temperature from a remote location, or they may turn down the settings from a remote location. If users could more readily communicate with an embedded system in a vending machine, as a further example, vendors of products could remotely determine when certain items must be refilled or when there was a problem with the vending machine. Thus, benefits may be realized if communications with embedded systems were enabled and/or enhanced.

As required by 37 C.F.R. § 41.37(c)(1)(v), a summary of claimed subject matter immediately follows. The references to the specification refer only to embodiments of the invention. The invention is defined by the claims. Accordingly, these references to the specification are not meant to limit the scope of the claims at issue in any way but are only provided because they are mandated by 37 C.F.R. § 41.37(c)(1)(v). All references are to the patent specification.

1. A communications module for facilitating wireless electronic communications with an electronic device, the module comprising:

a processor; (page 10, lines 5-12; fig. 7, ref. no. 702)

a wireless module in electronic communication with the processor for wireless communications with the electronic device; (page 11, lines 19-23; fig. 7, ref. no. 714)

a paging module in electronic communication with the processor for communicating with a computer through a paging network; (page 10, lines 17-21; fig. 7, ref. no. 708)

a modem in electronic communication with the processor for communicating with the computer through a communications network; (page 11, lines 24-27; fig. 7, ref. no. 711)

memory in electronic communication with the processor for storing data, the memory being programmed to periodically contact the computer wherein the computer is remotely located from the communications module; (page 10, lines 13-20; fig. 7, ref. no. 704)

a customer identification stored in memory to identify a customer associated with the communications module; (page 12, lines 4-10; fig. 8, ref. no.802)

an outbound message queue for storing outbound messages being sent from the electronic device to the computer; and (page 12, lines 11-15; fig. 8, ref. no. 808)

an inbound message queue for storing inbound messages being sent to the electronic device from the computer. (page 12, lines 11-15; fig. 8, ref. no.810)

25. A communications module for facilitating electronic communications between a computer and a remote electronic device, wherein the computer is programmed to send pages to the communications module through a paging network and wherein the communications module is programmed to contact the computer through a communications network, the module comprising:

a processor; (page 10, lines 5-12; fig. 7, ref. no. 702)

a wireless module in electronic communication with the processor for wireless communications with the electronic device; (page 11, lines 19-23; fig. 7, ref. no. 714)

a paging module in electronic communication with the processor for receiving pager communications from the computer through the paging network; (page 10, lines 17-21; fig. 7, ref. no. 708)

a modem in electronic communication with the processor for communicating with the computer through the communications network, wherein the computer is remotely located from the communications module; (page 11, lines 24-27; fig. 7, ref. no. 711)

memory in electronic communication with the processor for storing data; (page 10, lines 13-20; fig. 7, ref. no. 704)

a customer identification stored in memory to identify a customer associated with the communications module; (page 12, lines 4-10; fig. 8, ref. no.802)

an outbound message queue for storing outbound messages being sent from the electronic device to the computer; and (page 12, lines 11-15; fig. 8, ref. no.808)

an inbound message queue for storing inbound messages being sent to the electronic device from the computer. (page 12, lines 11-15; fig. 8, ref. no. 810)

43. A communications module for facilitating electronic communications between a computer and a plurality of remote electronic devices, wherein the computer is programmed to send pages to the communications module through a paging network and wherein the communications module is programmed to contact the computer through a communications network, the module comprising:

a processor; (page 10, lines 5-12; fig. 7, ref. no. 702)

a wireless module in electronic communication with the processor for wireless communications with the plurality of electronic devices; (page 11, lines 19-23; fig. 7, ref. no. 714)

a paging module in electronic communication with the processor for receiving pager communications from the computer through the paging network; (page 10, lines 17-21; fig. 7, ref. no. 708)

a modem in electronic communication with the processor for communicating with the computer through the communications network, wherein the computer is remotely located from the communications module; (page 11, lines 24-27; fig. 7, ref. no. 711)

memory in electronic communication with the processor for storing data; (page 10, lines 13-20; fig. 7, ref. no. 704)

a customer identification stored in memory to identify a customer associated with the communications module; (page 12, lines 4-10; fig. 8, ref. no.802)

an outbound message queue for storing outbound messages being sent from the plurality of electronic devices to the computer; and (page 12, lines 11-15; fig. 8, ref. no.808)

an inbound message queue for storing inbound messages being sent to the plurality of electronic devices from the computer. (page 12, lines 11-15; fig. 8, ref. no.810)

59. A method for facilitating electronic communications between a computer and a remote electronic device, the method comprising:

sending an inbound message, by the computer, to a communications module, wherein the communications module comprises: (page 14, lines 16-22; fig. 11, ref. no. 1116)

a processor; (page 10, lines 5-12; fig. 7, ref. no. 702)

a wireless module in electronic communication with the processor for wireless communications with the electronic device; (page 11, lines 19-23; fig. 7, ref. no. 714)

a paging module in electronic communication with the processor for receiving pager communications from the computer through a paging network, wherein the computer is remotely located from the communications module; (page 10, lines 17-21; fig. 7, ref. no. 708)

a modem in electronic communication with the processor for communicating with the computer through a communications network; (page 11, lines 24-27; fig. 7, ref. no. 711)

memory in electronic communication with the processor for storing data; and (page 10, lines 13-20; fig. 7, ref. no. 704)

a customer identification stored in memory to identify a customer associated with the communications module; (page 12, lines 4-10; fig. 8, ref. no.802)

storing the inbound message in an inbound message queue; (page 12, lines 11-15; fig. 8, ref. no.810)

sending the inbound message to the electronic device; (page 14, lines 1-2; fig. 11, ref. no. 1108)

receiving an outbound message from the electronic device; (page 14, lines 2-4; fig. 11, ref. no. 1110)

storing the outbound message in an outbound message queue; and (page 12, lines 11-15; fig. 8, ref. no.808)

sending the outbound message to the computer from the communications module. (page 14, lines 16-22; fig. 11, ref. no. 1114)

70. A communications module for facilitating wireless electronic communications with an electronic device, the module comprising:

a processor; (page 10, lines 5-12; fig. 7, ref. no. 702)

a wireless module in electronic communication with the processor for wireless communications with the electronic device; (page 11, lines 19-23; fig. 7, ref. no. 714)

a first modem in electronic communication with the processor for communicating with a computer through a communications network, wherein the computer is remotely located from the communications module; (page 11, lines 24-27; fig. 7, ref. no. 711)

a second modem in electronic communication with the processor for communicating with the computer through the communications network; (page 11, lines 24-27; fig. 7, ref. no. 711)

a paging module in electronic communication with the processor for receiving pager communications from the computer through a paging network; (page 10, lines 17-21; fig. 7, ref. no. 708)

memory in electronic communication with the processor for storing data; (page 10, lines 13-20; fig. 7, ref. no. 704)

a customer identification stored in memory to identify a customer associated with the communications module; (page 12, lines 4-10; fig. 8, ref. no.802)

an outbound message queue for storing outbound messages being sent from the electronic device to the computer; and (page 12, lines 11-15; fig. 8, ref. no.808)

an inbound message queue for storing inbound messages being sent to the electronic device from the computer. (page 12, lines 11-15; fig. 8, ref. no.810)

71. A system for facilitating electronic communications between a computer and a plurality of remote electronic devices, wherein the computer is programmed to send pages to a communications module through a paging network and wherein the communications module is programmed to contact the computer through a communications network, wherein the computer is remotely located from the communications module, the system comprising:

a computer, wherein the computer comprises: (page 7, line 27 to page 8, line 7; fig. 1, ref. no. 106)

a processor; (page 7, lines 13-30; fig. 3, ref. no. 302)

a paging module in electronic communication with the processor for sending pager communications to the communications module though a paging network; (page 8, lines 8-14; fig. 3, ref. no. 314)

a modem in electronic communication with the processor for communicating with the communications module through a communications network; (page 8, lines 10-15; fig. 3, ref. no. 312)

a message handler for reading and writing data to and from paging software in order to send and receive messages through the paging network; and (page 8, lines 19-27; fig. 4, ref. no.402)

memory in electronic communication with the processor for storing data, the memory being programmed to periodically contact the communications module; (page 7, lines 13-30; fig. 3, ref. no. 304)

a communications module, wherein the module comprises: (page 5, line 26 to page 6, line 3; fig. 1, ref. no. 104)

a processor; (page 10, lines 5-12; fig. 7, ref. no. 702)

a wireless module in electronic communication with the processor for wireless communications with the plurality of electronic devices; (page 11, lines 19-23; fig. 7, ref. no. 714)

a paging module in electronic communication with the processor for receiving pager communications from the computer through the paging network, wherein the computer is remotely located from the communications module; (page 10, lines 17-21; fig. 7, ref. no. 708)

a modem in electronic communication with the processor for communicating with the computer through the communications network; (page 11, lines 24-27; fig. 7, ref. no. 711)

memory in electronic communication with the processor for storing data; (page 10, lines 13-20; fig. 7, ref. no. 704)

an outbound message queue for storing outbound messages being sent from the plurality of remote electronic devices to the computer; and (page 12, lines 11-15; fig. 8, ref. no. 808)

an inbound message queue for storing inbound messages being sent to the plurality of remote electronic devices from the computer. (page 12, lines 11-15; fig. 8, ref. no.810)

6. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The following issues are presented for review:

Whether claims 1-6, 8, 10-12, 15, 17, 19-31, 33, 35-38, 41-49, 51, 53-55, and 58-71 are patentable under 35 U.S.C. § 103(a) over Petite in view of Wade in further view of Allison.

7. ARGUMENT

A. Claims 1-6, 8, 10-12, 15, 17, 19-31, 33, 35-38, 41-49, 51, 53-55 and 58-71 Rejected Under 35 U.S.C. § 103(a)

Claims 1-6, 8, 10-12, 15, 17, 19-31, 33, 35-38, 41-49, 51, 53-55 and 58-71 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,891,838 to Petite et al. (hereinafter, "Petite") in view of U.S. Patent Application Publication No. 2002/0019831 to Wade (hereinafter, "Wade") in further view of U.S. Patent Application Publication No. 2003/0083078 to Allison et al. (hereinafter, "Allison").

The factual inquiries that are relevant in the determination of obviousness are determining the scope and contents of the prior art, ascertaining the differences between the prior art and the claims in issue, resolving the level of ordinary skill in the art, and evaluating evidence of secondary consideration. KSR Int'l Co. v. Teleflex Inc., 550 U.S. ___, 2007 U.S. LEXIS 4745, at **4-5 (2007) (citing Graham v. John Deere Co. of Kansas City, 383 U.S. 1, 17-18 (1966)). As the Board of Patent Appeals and Interferences has recently confirmed, "obviousness requires a suggestion of all limitations in a claim." In re Wada and Murphy, Appeal 2007-3733 (citing CFMT, Inc. v. Yieldup Intern. Corp., 349 F.3d 1333, 1342 (Fed. Cir. 2003)). Moreover, the analysis in support of an obviousness rejection "should be made explicit." KSR, 2007 U.S. LEXIS 4745, at **37. "[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." Id. (citing In re Kahn, 441 F.3d 977, 988 (Fed. Cir. 2006)).

Appellants respectfully submit that the claims at issue are patentably distinct from the cited references. The cited references do not teach or suggest all of the subject matter in these claims.

Claim 1 recites "a paging module in electronic communication with the processor for communicating with a computer through a paging network." The Office Action admits that "Petite does not teach a paging module in electronic communication with the processor for communicating with a computer through a paging network." (Office Action, page 4.) The

Office Action has attempted to combine Wade with Petite to render claim 1 obvious. However, as will be shown below, the references teach away from such a combination. Teaching away from the claims must be considered. (M.P.E.P. § 2141.02.) Furthermore, even if the references could be combined in such a way, such a combination would render the prior art unsatisfactory for its intended purpose. A proposed modification cannot render the prior art unsatisfactory for its intended purpose or change the principle of operation of a reference. (M.P.E.P. § 2143.01.)

Wade states "[t]he user node 12 may be any device which allows a user to access information from the Internet 16 . . . The user node 16 may access the Internet 16 through . . . a paging network . . . The user node 12 . . . may comprise any device, such as . . . a pager." (Wade, page 4, paragraph [0052].) Regarding this portion of Wade, the Office Action asserts "it would have been obvious to one of ordinary skill in the art at the time of the invention was made to use the paging network, including paging modules that enable communication via said paging network, of Wade in the system of Petite as an alternative means for communicating with the servers." (Office Action, pages 4-5.) Appellants respectfully disagree with this assertion.

Wade is directed to "methods of delivering advertisements over the Internet." (Wade, page 2, paragraph [0019].) According to Wade, one disadvantage of existing methods of delivering advertisements over the Internet that Wade attempts to overcome is that "the advertisements take a relatively long time to download." (Id.) Wade further states "[a] need therefore exists for systems and methods for reducing the amount of time or the bandwidth necessary to deliver advertisements over the Internet." (Id.) This teaches away from combining a pager for communications. Appellants submit that the specification of Wade, which simply states that that the user node may be a pager which may access the Internet through a paging network, does not enable any person skilled in the art on how to actually use a paging device to receive advertisements over the Internet and "reduc[e] the amount of time or the bandwidth necessary to deliver advertisements over the Internet." (Id.) Further, using a pager would render the prior art unsatisfactory for its intended purpose because using a pager network for delivering an advertisement for the Internet would take an incredibly long time to download.

It is well known in the art that a pager is a telecommunications device used to request a phone call from a pager subscriber and/or receive simple text communications in the form of e-

mail. (Pager, http://en.wikipedia.org/w/index.php?title=Pager&oldid=175437237 (last visited Dec. 4, 2007) (shown in Exhibit A, attached).) Wade does not enable any person skilled in the art to how to receive and display advertisements over the Internet using a pager and a paging network.

For example, Wade states:

> At 112, the user node 12 manipulates the initial download and launches the audio file, which may be music. At 113 , 114, and 115 , the user node 12 continues to play the advertisement in accordance with the Java applets and scripts received from the advertisement server 20. The user node 12 completes the playing of the advertisement at 115 and then, at 116, transmits the verification signal to the advertisement server 20.

Wade, page 7, paragraph [0081].

The specification of Wade does not enable any person skilled in the art on how a pager could "launch[] the audio file, which may be music . . . [and] continue[] to play the advertisement in accordance with the Java applets and scripts received from the advertisement server." (Id.) In addition, Wade states:

> According to one aspect of the invention, the presentation includes an initial download that can be quickly delivered to the user's node through a computer network, which is preferably the Internet . . . The presentation also includes subsequent downloads that are transmitted through the Internet to the user's node for completing the presentation. The presentation is preferably a multi-media presentation which includes any combination of text, graphics, and audio. Along with the initial download and the subsequent download, a delivery verification command is also transmitted to the user's computer.

Wade, page 3, paragraph [0020].

Again, the specification of Wade does not enable any person skilled in the art on how a pager could download a presentation that "is preferably a multi-media presentation which includes any combination of text, graphics, and audio." (Id.) Instead, a pager is "a small radio receiver which beeps to alert the wearer of messages or telephone calls. It displays the telephone number of the caller so the wearer can call back." (Pager, http://www.computeruser.com/resources/dictionary/dictionary.html (last visited, Dec. 4, 2007) (shown in Exhibit B, attached).) Wade has provided no enablement as to how a paging device could download and display a multi-media presentation (e.g., banner ads on web sites).

Wade also does not enable any person skilled in the art as to how implementing a paging network "reduce[s] the amount of time or the bandwidth necessary to deliver advertisements over the Internet." In the United States, pagers typically receive signals over a paging network using the FLEX protocol. (Pager, http://en.wikipedia.org/w/index.php?title=Pager&oldid=175437237 (last visited Dec. 4, 2007) (shown in Exhibit A, attached).) The FLEX protocol transmits data at speeds of 1.6 kbps to 6.4 kbps. (FLEX (protocol), http://en.wikipedia.org/w/index.php?title=FLEX_%28protocol%29&oldid=169634277 (last visited Dec. 4, 2007) (shown in Exhibit C, attached).) These speeds are substantially lower than a modem that can transmit data at 56 kbps, digital subscriber lines (DSL) that carry data at a rate of 1.5 mbps and cable modems that can transmit data at 10 mbps. (DSL, http://www.computeruser.com/resources/dictionary/dictionary.html (last visited Dec. 4, 2007) (shown in Exhibit D, attached) and Cable Modem, http://www.computeruser.com/resources/dictionary/dictionary.html (last visited Dec. 4, 2007) (shown in Exhibit E, attached).) As such, using a pager and paging network would substantially increase the time necessary to deliver advertisements over the Internet. In other words, implementing a pager and paging network with the invention of Wade would produce highly undesirable results, if not intolerable results. The needs of the prior art clearly teach away from such a combination, and, even if someone did combine the prior art in such a way, the combination would be unsatisfactory for its intended purpose. The specification of Wade does not enable any person skilled in the art on how the use of a pager and paging network would "reduce the amount of time or the bandwidth necessary to deliver advertisements over the Internet."

Further, the M.P.E.P. states "the claimed combination cannot change the principle of operation of the primary reference or render the reference inoperable for its intended purpose." See M.P.E.P § 2143.01. The purpose of the Petite reference it to "monitor[], report[], and control[] residential systems, via a multiple access wide area network, a gateway, radio-frequency transceivers and repeaters, and software applications." (Petite, col. 1, lines 30-34.) In particular, Petite states "[t]he local gateways . . . may be configured to . . . communicate the

remote data signal transmissions . . . to one or more application servers . . . or other . . . interconnected computing devices." (Petite, col. 7, lines 43-48.) Accordingly, an intended purpose of Petite is for the gateway to communicate with the computing devices.

The Office Action relies on the following of Petite, which states:

> It will be appreciated by those skilled in the art that the information transmitted and received by the RF communication devices of the present invention may be further integrated with other data transmission protocols for transmission across telecommunications and computer networks other than the WAN 130. In addition, it should be further appreciated that telecommunications and computer networks other than the WAN 130 can function as a transmission path between the communicatively coupled RF communication devices, the local gateways 110, and the application server 160.

Petite, col. 9, lines 4-14.

It appears that the Office Action relies on the above general statement of Petite to support the assertion that "there is a suggestion for an alternative communication means." (Office Action, pages 2, 4.) However, simply because Petite provides an overly broad, generalized statement regarding other communication means, does not mean that the use of a paging network would be practical or even possible in Petite. If the paging module taught in Wade was implemented in the local gateway of Petite, Petite would be rendered inoperable for its intended purpose. In other words, the gateway would be unable to communicate with the "application servers . . . or other interconnected computing devices."

As previously stated, pagers are used to send/receive small amounts of data, such as short numeric and alphanumeric messages. In contrast, the local gateways of Petite "communicate information in the form of data and control signals." If the gateways of Petite were communicating using a paging network, the amount of "data and control signals" that are communicated would be substantially reduced or eliminated.

Further, devices that are capable of transmitting/receiving pages over a paging network are not constantly connected to a paging network. In contradistinction, computers, as taught in Petite, are constantly connected to their computer networks. For example, "the local gateways 10 are permanently integrated with the WAN." (Petite, col. 8, lines 28-29.) Appellants submit that one of ordinary skill in the art would not find it obvious to include "gateways",

"workstations" or "laptops" with paging capabilities because the size of signals sent through a paging network are limited to a small amount of data and "gateways", "workstations" or "laptops" permanently connected to a paging network would greatly hinder the efficiency of the paging network.

Further, if a paging network was incorporated in Petite, and the gateways were not permanently integrated with the paging network, a particular portion of Petite would be rendered unsatisfactory for its intended purpose. For example, Petite states "[s]ince the local gateways are permanently integrated with the WAN 130, the application server 160 can host application specific software which was typically hosted in an application specific local controller." (Petite, col. 8, lines 28-32.) In other words, if the gateways were not permanently incorporated with the network, the application server would not be able to host application specific software. As previously mentioned, one or ordinary skill in the art would not permanently connect a gateway to a paging network because the efficiency of the paging network would be greatly hindered. As such, the application server in Petite would not be able to host application specific software because the gateway would not be permanently integrated with the network.

In summary, the blanket statements of Wade and Petite to incorporate pagers and paging networks do not render Appellants' claim obvious. The specification of Wade clearly teaches away from using pagers and paging networks in the invention of Wade. Further, the "proposed modification [including a paging module on the gateway] would render [Petite] . . . unsatisfactory for its intended purpose" (See M.P.E.P. § 2143.01) because the gateway would be unable to communicate the same amount of data and control signals with the "application servers . . . or other . . . interconnected computing devices." In addition, since the gateways would not be permanently integrated with the WAN, the application server would not be able to host application specific software.

The addition of Allison does not overcome the deficiencies of Petite and Wade. The Office Action merely points to Allison to support the assertion that "Allison teaches a gateway comprising a message queue for storing inbound and outbound messages." (Office Action, page 5.) The Office Action does not point to, and Appellants can not find, any teaching or suggestion

by Allison of "a paging module in electronic communication with the processor for communicating with a computer through a paging network."

In view of the foregoing, Appellants respectfully submit that claim 1 is patentably distinct from the cited references. Accordingly, Appellants respectfully request that the rejection of claim 1 be withdrawn.

Claims 2-6, 8, 10-12, 15, 17 and 19-24 depend either directly or indirectly from claim 1. Accordingly, Appellants respectfully request that the rejection of claims 2-6, 8, 10-12, 15, 17 and 19-24 be withdrawn.

Claims 25, 43, 59, 70 and 71 include subject matter similar to the subject matter of claim 1. As such, Appellants submit that claims 25, 43, 59, 70 and 71 are patentably distinct from the cited references for at least the same reasons as those presented above in connection with claim 1. Accordingly, Appellants respectfully request that the rejection of claims 25, 43, 59, 70 and 71 be withdrawn.

Claims 26-31, 33, 35-38 and 41-42 depend either directly or indirectly from claim 25. Claims 44-49, 51, 53-55 and 58 depend either directly or indirectly from claim 43. Claims 60-69 depend either directly or indirectly from claim 59. Accordingly, Appellants respectfully that the rejection of claims 26-31, 33, 35-38, 41-42, 44-49, 51, 53-55, 58 and 60-69 be withdrawn.

Respectfully submitted,

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CLAIMS APPENDIX

Listing of Claims involved in the appeal:

1. A communications module for facilitating wireless electronic communications with an electronic device, the module comprising:

a processor;

a wireless module in electronic communication with the processor for wireless communications with the electronic device;

a paging module in electronic communication with the processor for communicating with a computer through a paging network;

a modem in electronic communication with the processor for communicating with the computer through a communications network;

memory in electronic communication with the processor for storing data, the memory being programmed to periodically contact the computer wherein the computer is remotely located from the communications module;

a customer identification stored in memory to identify a customer associated with the communications module;

an outbound message queue for storing outbound messages being sent from the electronic device to the computer; and

an inbound message queue for storing inbound messages being sent to the electronic device from the computer.

2. The communications module as defined in claim 1 wherein the memory is programmed with instructions to cause the processor to communicate with the electronic device using the wireless module.

3. The communications module as defined in claim 1 wherein the memory is programmed with instructions to cause the processor to communicate with the computer using the paging module.

4. The communications module as defined in claim 1 wherein the memory is programmed with instructions to cause the processor to communicate with the computer through the communications network using the modem.

5. The communications module as defined in claim 1 wherein the paging module is a one-way paging module for receiving pages.

6. The communications module as defined in claim 1 wherein the processor is a microcontroller.

7. (Canceled)

8. The communications module as defined in claim 1 programmed to periodically contact the computer using the modem.

9. (Canceled)

10. The communications module as defined in claim 8 further programmed to send the outbound messages to the computer when the computer is periodically contacted.

11. The communications module as defined in claim 1 programmed to be periodically contacted by the electronic device.

12. The communications module as defined in claim 1 programmed to be periodically contacted by the electronic device through the wireless module.

13. (Canceled)

14. (Canceled)

15. The communications module as defined in claim 1 further programmed to send the outbound messages to the computer when the computer is periodically contacted.

16. (Canceled)

17. The communications module as defined in claim 8 further programmed to receive the inbound messages from the computer when the computer is periodically contacted.

18. (Canceled)

19. The communications module as defined in claim 1 further programmed to be periodically contacted by the electronic device.

20. The communications module as defined in claim 1 programmed to be periodically contacted by the electronic device through the wireless module.

21. The communications module as defined in claim 19 further programmed to send the inbound messages to the electronic device when the electronic device periodically contacts the communications module.

22. The communications module as defined in claim 18 wherein each inbound message includes a device ID.

23. The communications module as defined in claim 22 further programmed to identify the electronic device when the electronic device periodically contacts the communications module and further programmed to search the inbound message queue for appropriate inbound messages for the electronic device and to transmit the appropriate inbound messages to the electronic device.

24. The communications module as defined in claim 1 programmed to contact the computer using the modem in response to a request communication from the computer received through the paging module.

25. A communications module for facilitating electronic communications between a computer and a remote electronic device, wherein the computer is programmed to send pages to the communications module through a paging network and wherein the communications module is programmed to contact the computer through a communications network, the module comprising:

a processor;

a wireless module in electronic communication with the processor for wireless communications with the electronic device;

a paging module in electronic communication with the processor for receiving pager communications from the computer through the paging network;

a modem in electronic communication with the processor for communicating with the computer through the communications network, wherein the computer is remotely located from the communications module;

memory in electronic communication with the processor for storing data;

a customer identification stored in memory to identify a customer associated with the communications module;

an outbound message queue for storing outbound messages being sent from the electronic device to the computer; and

an inbound message queue for storing inbound messages being sent to the electronic device from the computer.

26. The communications module as defined in claim 25 wherein the communications module is programmed with wireless instructions to cause the processor to communicate with the electronic device using the wireless module.

27. The communications module as defined in claim 26 wherein the communications module is further programmed with pager instructions to cause the processor to receive the pager communications from the computer using the paging module.

28. The communications module as defined in claim 27 wherein the communications module is further programmed with modem instructions to cause the processor to communicate with the computer through the communications network using the modem.

29. The communications module as defined in claim 28 wherein the paging module is a one-way paging module for receiving pages.

30. The communications module as defined in claim 29 wherein the processor is a microcontroller.

31. The communications module as defined in claim 30 programmed to periodically contact the computer using the modem.

32. (Canceled)

33. The communications module as defined in claim 31 further programmed to receive the inbound messages from the computer when the computer is periodically contacted.

34. (Canceled)

35. The communications module as defined in claim 25 programmed to be periodically contacted by the electronic device through the wireless module.

36. The communications module as defined in claim 35 further programmed to send the inbound messages to the electronic device when the electronic device periodically contacts the communications module.

37. The communications module as defined in claim 36 wherein each inbound message includes a device ID.

38. The communications module as defined in claim 37 further programmed to identify the electronic device when the electronic device periodically contacts the communications module and further programmed to search the inbound message queue for appropriate inbound messages for the electronic device and to transmit the appropriate inbound messages to the electronic device.

39. (Canceled)

40. (Canceled)

41. The communications module as defined in claim 25 further programmed to send the outbound messages to the computer when the computer is periodically contacted.

42. The communications module as defined in claim 28 programmed to contact the computer using the modem in response to a request communication from the computer received through the paging module.

43. A communications module for facilitating electronic communications between a computer and a plurality of remote electronic devices, wherein the computer is programmed to send pages to the communications module through a paging network and wherein the communications module is programmed to contact the computer through a communications network, the module comprising:

a processor;

a wireless module in electronic communication with the processor for wireless communications with the plurality of electronic devices;

a paging module in electronic communication with the processor for receiving pager communications from the computer through the paging network;

a modem in electronic communication with the processor for communicating with the computer through the communications network, wherein the computer is remotely located from the communications module;

memory in electronic communication with the processor for storing data;

a customer identification stored in memory to identify a customer associated with the communications module;

an outbound message queue for storing outbound messages being sent from the plurality of electronic devices to the computer; and

an inbound message queue for storing inbound messages being sent to the plurality of electronic devices from the computer.

44. The communications module as defined in claim 43 wherein the communications module is programmed with wireless instructions to cause the processor to communicate with the plurality of electronic devices using the wireless module.

45. The communications module as defined in claim 44 wherein the communications module is further programmed with pager instructions to cause the processor to receive the pager communications from the computer using the paging module.

46. The communications module as defined in claim 45 wherein the communications module is further programmed with modem instructions to cause the processor to communicate with the computer through the communications network using the modem.

47. The communications module as defined in claim 46 wherein the paging module is a one-way paging module for receiving pages.

48. The communications module as defined in claim 47 wherein the processor is a microcontroller.

49. The communications module as defined in claim 48 programmed to periodically contact the computer using the modem.

50. (Canceled)

51. The communications module as defined in claim 49 further programmed to receive the inbound messages from the computer when the computer is periodically contacted.

52. (Canceled)

53. The communications module as defined in claim 43 programmed to be periodically contacted by the plurality of electronic devices through the wireless module.

54. The communications module as defined in claim 53 wherein each inbound message includes a device ID.

55. The communications module as defined in claim 54 further programmed to identify an electronic device when the electronic device periodically contacts the communications module and further programmed to search the inbound message queue for appropriate inbound messages using the device ID for the electronic device and to transmit the appropriate inbound messages to the electronic device.

56. (Canceled)

57. (Canceled)

58. The communications module as defined in claim 43 further programmed to send the outbound messages to the computer when the computer is periodically contacted.

59. A method for facilitating electronic communications between a computer and a remote electronic device, the method comprising:

sending an inbound message, by the computer, to a communications module, wherein the communications module comprises:

a processor;

a wireless module in electronic communication with the processor for wireless communications with the electronic device;

a paging module in electronic communication with the processor for receiving pager communications from the computer through a paging network, wherein the computer is remotely located from the communications module;

a modem in electronic communication with the processor for communicating with the computer through a communications network;

memory in electronic communication with the processor for storing data; and

a customer identification stored in memory to identify a customer associated with the communications module;

storing the inbound message in an inbound message queue;

sending the inbound message to the electronic device;

receiving an outbound message from the electronic device;

storing the outbound message in an outbound message queue; and

sending the outbound message to the computer from the communications module.

60. The method as defined in claim 59 further comprising communicating with the electronic device when the electronic device periodically contacts the communications module.

61. The method as defined in claim 59 wherein sending the inbound message to the electronic device is accomplished through use of the wireless module.

62. The method as defined in claim 59 wherein sending the outbound message to the computer from the communications module is accomplished through use of the modem.

63. The method as defined in claim 59 wherein the communications module is programmed to periodically contact the computer using the modem.

64. The method as defined in claim 63 wherein the communications module is further programmed to receive the inbound message from the computer when the computer is periodically contacted.

65. The method as defined in claim 64 wherein the communications module is further programmed to send the outbound message to the computer when the computer is periodically contacted.

66. The method as defined in claim 59 wherein the communications module is programmed to be periodically contacted by the electronic device through the wireless module.

67. The method as defined in claim 66 wherein the communications module is further programmed to send the inbound messages to the electronic device when the electronic device periodically contacts the communications module.

68. The method as defined in claim 59 further comprising identifying the electronic device when the electronic device periodically contacts the communications module.

69. The method as defined in claim 68 further comprising searching the inbound message queue for appropriate inbound messages for the electronic device and transmitting the appropriate inbound messages to the electronic device.

70. A communications module for facilitating wireless electronic communications with an electronic device, the module comprising:

a processor;

a wireless module in electronic communication with the processor for wireless communications with the electronic device;

a first modem in electronic communication with the processor for communicating with a computer through a communications network, wherein the computer is remotely located from the communications module;

a second modem in electronic communication with the processor for communicating with the computer through the communications network;

a paging module in electronic communication with the processor for receiving pager communications from the computer through a paging network;

memory in electronic communication with the processor for storing data;

a customer identification stored in memory to identify a customer associated with the communications module;

an outbound message queue for storing outbound messages being sent from the electronic device to the computer; and

an inbound message queue for storing inbound messages being sent to the electronic device from the computer.

71. A system for facilitating electronic communications between a computer and a plurality of remote electronic devices, wherein the computer is programmed to send pages to a communications module through a paging network and wherein the communications module is programmed to contact the computer through a communications network, wherein the computer is remotely located from the communications module, the system comprising:

a computer, wherein the computer comprises:

a processor;

a paging module in electronic communication with the processor for sending pager communications to the communications module though a paging network;

a modem in electronic communication with the processor for communicating with the communications module through a communications network;

a message handler for reading and writing data to and from paging software in order to send and receive messages through the paging network; and

memory in electronic communication with the processor for storing data, the memory being programmed to periodically contact the communications module;

a communications module, wherein the module comprises:

a processor;

a wireless module in electronic communication with the processor for wireless communications with the plurality of electronic devices;

a paging module in electronic communication with the processor for receiving pager communications from the computer through the paging network, wherein the computer is remotely located from the communications module;

a modem in electronic communication with the processor for communicating with the computer through the communications network;

memory in electronic communication with the processor for storing data;

an outbound message queue for storing outbound messages being sent from the plurality of remote electronic devices to the computer; and

an inbound message queue for storing inbound messages being sent to the plurality of remote electronic devices from the computer.

EVIDENCE APPENDIX

EXHIBITS A-E

EXHIBIT A

Entered into the record by examiner on December 20, 2007

(Exhibit A includes 5 pages including cover page)

Pager

From Wikipedia, the free encyclopedia

This is an old revision of this page, as edited by RandalSchwartz (Talk | contribs) at 07:59, 3 December 2007. It may differ significantly from the current revision.

(diff) ← Older revision | current version (diff) | Newer revision → (diff)

A **pager** (sometimes referred to as a *Beeper*) is a personal telecommunications device used to request a phone call from a pager subscriber and/or receive simple text communications in the form of e-mail and SMS. Pagers exist as one-way numeric and alphanumeric models that only receive incoming communications and as two-way alphanumeric models capable of sending e-mails and SMS messaging.

Until the popular adoption of mobile phones in the late 1990s, pagers fulfilled the role of common personal and mobile communications. As of 2007, pagers have fallen into obsolescence and are preserved only by niche markets consisting largely of emergency service personnel, medical personnel, and information technology support staff.

Contents

History

Paging was invented by Multitone Electronics in 1956 at St Thomas' Hospital in London to alert doctors attending emergencies. Since then, paging has evolved in sophistication. Today, millions of messages are transmitted to people needing fast, reliable messaging communications.

In the world of paging there are two distinct categories of system in operation. There are on-site paging systems that are used in hospitals to convey the same urgent information as when they were invented in 1956. The other type is wide area paging, which offers similar features as on-site paging, but provides the radio coverage across a city, region or country rather than in just one hospital building.

Originally operating on AM radio frequencies, paging moved to FM schemes prior to becoming a ubiquitous form of communications around the developed and developing world. In some cases, before the advent of cellular phone systems the pager was used as a replacement for a lack of cheap local or international phone services.

Function and operation

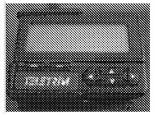
Paging is a subscription service offered in a variety of plans and options to meet the needs of a subscriber and the type of device used. In general, all pagers are given unique phone numbers while **alphanumeric pagers** are given an e-mail address, usually consisting of the phone number.

Upon calling a phone number assigned to a pager, the calling party reaches a recorded greeting asking the caller to enter a numeric message, and sometimes giving the caller an option to leave voice mail. Usually, within a few minutes, the paged person will receive an alert from the pager with the phone number to return the call and/or a pager code. In the case of e-mail paging, the text is be displayed.

- **Numeric pagers** are the simplest of the type of devices offering only a numeric display of the phone number to be called and pager codes
- **Alphanumeric pagers** are essentially modified versions of numeric pagers with sophisticated display to accommodate text. These devices are usually given an e-mail address to receive text messages.
- **Two-way Alphanumeric pagers** are alphanumeric pagers with the ability to send text messages typed in with a small keyboard.

Most modern paging systems use simulcast delivery by satellite controlled networks. This type of distributed system makes them inherently more reliable than terrestrial based cellular networks for message delivery. Many paging transmitters may overlap a coverage area, while cellular systems are built to fill holes in existing networks. When terrestrial networks go down in an emergency, satellite systems continue to perform. Because of superior building penetration and availability of service in disaster situations, pagers are often used by first responders in emergencies.

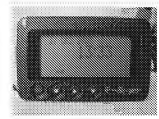
The front end of a numeric pager



A Motorola alphanumeric pager used in Brazil in the 1990s, operated by Teletrim

Pager use in the 21st century

Pagers are still in use today in places where mobile phones typically cannot reach users, and also in places where the operation of the radio transmitters contained in mobile phones is problematic or prohibited. One such type of location is a large hospital complex, where cellular coverage is often weak or nonexistent, where radio transmitters are suggested to interfere with sensitive medical equipment and where there is a greater need of assurance for a timely delivery of a message.



A Skyper pager that is in use for HAM Radio

Some common environments in which pagers are still used are:

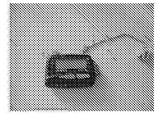
- Pagers remain in use to notify emergency personnel. For example, they are required to be used by UK lifeboat men and retained firefighters.
- Pagers are mostly carried by staff in medical establishments, allowing them to be summoned to emergencies.
- Pagers are also widely used in the IT world, especially in cases where on-call technicians cannot rely on more modern cellular telephone systems. A good example would be in a cellular telephone company, where a service interruption in the cellular network would also mean that it would not be possible to notify a technician due to the outage in the network. Therefore, in these companies, engineers are usually equipped with a pager that uses another telco's mobile network to ensure reachability in case of emergency. Pagers are also frequently used by non-telco IT departments.

A pager that is in use for emergency services

Additionally, some irrigation control systems and traffic signals are now controlled by messages sent via paging networks. Due to energy concerns in the United States and other countries, 2Way paging networks are being used for power company meter reading and control.

Security

Pagers also have privacy advantages compared with cellular phones. Since a one-way pager is a passive receiver only (it sends no information back to the base station), its location cannot be tracked. However, this can also be disadvantageous, as a message sent to a pager must be broadcast from every paging transmitter in the pager's service area. Thus, if a pager has nationwide service, a message sent to it could be intercepted by criminals or law enforcement agencies anywhere within the nationwide service area.



A mid '90s opaque black Avont pager model

Technical information

Many paging network operators now allow numeric and textual pages to be submitted to the paging networks via email. This is convenient for many users, due to the widespread adoption of email; but email-based message submission methods do not usually provide any way to ensure that messages have been received by the paging network. This can result in pager messages being delayed or lost. Older forms of message submission using the Telocator Alphanumeric input Protocol protocol involve modem connections directly to a paging network, and are less subject to these delays. For this reason, older forms of message submission retain their usefulness for disseminating highly-important alerts to users such as emergency services personnel.

Common paging protocols include TAP, FLEX, ReFLEX, POCSAG, Golay, ERMES and NTT. Past paging protocols include Two-tone and 5/6-tone.

In the United States, pagers typically receive signals using the FLEX protocol in the 900 MHz band. Commercial paging transmitters typically radiate 1000 watts of effective power, resulting in a much wider coverage area per tower than a mobile phone transmitter, which typically radiates around 0.6 Watts per channel.

Although 900 MHz FLEX paging networks tend to have stronger in-building coverage than mobile phone networks, commercial paging service providers will work with large institutions to install repeater equipment in the event that service is not available in needed areas of the subscribing institution's buildings. This is especially critical in hospital settings where emergency staff must be able to reliably receive pages in order to respond to patient needs.

Unlike mobile phones, most one-way pagers do not display any information about whether a signal is being received or about the strength of the received signal. Since one-way pagers do not contain transmitters, one-way paging networks have no way to track whether a message has been successfully delivered to a pager. Because of this, if a one-way pager is turned off or is not receiving a usable signal at the time a message is transmitted, the message will never be received and the sender of the message will not be notified of this fact.

Other radio bands used for pagers include the 400 MHz band, the VHF band, and the FM commercial broadcast band (88-108 MHz). Other paging protocols used in the VHF, 400 MHz UHF, and 900 MHz bands include POCSAG and ERMES. Pagers using the commercial FM band receive a subcarrier, called the Subsidiary Communications Authority, of a broadcast station.

See also

- Alfred J. Gross
- Plectron
- Motorola Minitor Voice Pager

External links

- MULTITONE ELECTRONICS Inventors & manufacturers of paging systems (http://www.multitone.com/)
- BBC news reports closure of UK domestic pager systems in 2001 (http://news.bbc.co.uk/1/hi/uk/1137923.stm)
- POCSAG and FLeX pager gallery (http://www.starboy.ru/pagers/pagers.html)

EXHIBIT B

Entered into the record by examiner on December 20, 2007

(Exhibit B includes 2 pages including cover page)

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pager search

Random Terms Recent Words

Word	Definition
pager	A small radio receiver which beeps to alert the wearer of messages or telephone calls. It displays the telephone number of the caller so the wearer can call back. Some pagers can display very short messages. Also called a beeper.

Random Words

Word : Fibonacci Number Program
Explanation : Fibonacci number program is a popular program in many beginning computer science courses

Word : **Gregorian calendar**
Explanation : The calendar used in most countries of the world, which has 12 months and 365 days a year (except for leap years). It is a modified version of the Julian calendar, and was introduced by Pope Gregory XIII in 1582. (See leap year.)

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Tech Word for Today

Word : Gregorian calendar
Explanation : The calendar used in most countries of the world, which has 12 months and 365 days a year (except fo
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EXHIBIT C

Entered into the record by examiner on December 20, 2007

(Exhibit C includes 2 pages including cover page)

FLEX (protocol)

From Wikipedia, the free encyclopedia

This is an old revision of this page, as edited by 208.42.94.149 (Talk) at 17:29, 6 November 2007. It may differ significantly from the current revision.

(diff) ← Older revision | current version (diff) | Newer revision → (diff)

FLEX is a communication protocol developed by Motorola and used in many pagers. FLEX provides one-way communication only (from the provider to the pager device), but a related protocol called ReFLEX provides two-way messaging.

Transmission of message data occurs in one of four modes: 1600/2, 3200/2, 3200/4, or 6400/4. All modes use FSK modulation. At 1600/2 this is on a 2 level FSK signal transmitted at 1600 bits per second. At 3200/2, this is a 2 level FSK signal transmitted at 3200 bits per second. At 3200/4, this is a 4 level FSK signal transmitted at 1600 symbols per second. Each 4 level symbol represents two bits for a bit rate of 3200 bits per second. At 6400/2, this is a 4 level FSK signal transmitted at 3200 symbols per second or 6400 bits per second.

Data is transmitted in a set of 128 frames that takes 4 minutes to complete. Each frame contains a sync followed by 10 data blocks. The data blocks contain 256, 512 or 1024 bits for 1600, 3200 or 6400 bits per second respectively.

A BCH type ECC is used to improve the integrity of the data. The standard has been designed to allow the pager's receiver to be turned off for a high percentage of the time and therefore save on battery usage.

Retrieved from "http://en.wikipedia.org/wiki/FLEX_%28protocol%29"

Categories: Mobile | Wireless stubs

EXHIBIT D

Entered into the record by examiner on December 20, 2007

(Exhibit D includes 2 pages including cover page)

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DSL search

Random Terms Recent Words

Word	Definition
DSL	Digital Subscriber Line or Digital Subscriber Loop. A technology which enables high-speed transmission of digital data over regular copper telephone lines. See also HDSL and ADSL.
DSL Access Multiplexer (DSLAM)	Digital Subscriber Line Access Multiplexer (DSLAM). A mechanism used by the phone company to link customers' DSL connections to a single high-speed ATM line.
DSLAM: Digital Subscriber Line Access Multiplexer	Digital Subscriber Line Access Multiplexer (DSLAM) is a device that aggregates many customer DSL connections to a single high-speed ATM line to the backbone network. When the phone company receives a DSL signal, an ADSL modem with a POTS splitter detects voice calls and data. Voice calls are sent to the PSTN, and data are sent to the DSLAM, where it passes through the ATM to the Internet, then back through the DSLAM and ADSL modem before returning to the customer's PC.
DSL - digital subscriber line	Digital subscriber lines carry data at high speeds over standard copper telephone wires. With DSL, data can be delivered at a rate of 1.5 mbps (around 30 times faster than through a 56-kbps modem)

Random Words

Word : customer support

Explanation : Service for customers that is provided by computer vendors and hardware and software manufacturers

Word : **Gregorian calendar**

Explanation : The calendar used in most countries of the world, which has 12 months and 365 days a year (except for leap years). It is a modified version of the Julian calendar, and was introduced by Pope Gregory XIII in 1582. (See leap year.)

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Tech Word for Today

Word : Gregorian calendar

Explanation : The calendar used in most countries of the world, which has 12 months and 365 days a year (except fo

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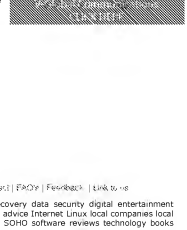

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(Exhibit E includes 2 pages including cover page)

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cable modem search

Random Terms Recent Words

Word	Definition
cable modem	A cable modem is an external device that hooks up to your computer and instead of getting an internet connection through your telephone wire (or another system), you get a connection through your cable network (same place your cable TV connection comes from). Cable modems translate radio frequency (RF) signals to and from the cable plant into Internet Protocol (IP), the communications protocol spoken by all computers connected to the Internet. Cable modems are designed to take advantage of the broadband cable infrastructure enabling peak connection speeds over 100 times faster than traditional dial-up connections. Cable modem provides access of computers to network over cable TV lines. Most cable modems supply a 10 Mbps Ethernet connection for the home LAN. Cable modem achieve higher access speed to the World Wide Web than phone lines using dial up modem or even ADSL modem. The actual performance of a cable modem Internet connection can vary depending on the utilization of the shared cable line in that neighborhood, but typical data rates range from 300 Kbps to 1500 Kbps.
Cable Modem	

Random Words

Word : CIR

Explanation : Committed Information Rate. The minimum transmission speed between computers in a frame relay network.

Word : **Gregorian calendar**

Explanation : The calendar used in most countries of the world, which has 12 months and 365 days a year (except for leap years). It is a modified version of the Julian calendar, and was introduced by Pope Gregory XIII in 1582. (See leap year.)

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Tech Word for Today

Word : Gregorian calendar

Explanation : The calendar used in most countries of the world, which has 12 months and 365 days a year (except fo

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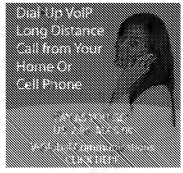

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